ADMENDMENT OF THE CLAIMS

The Applicant believes that the claims are allowable as they currently stand. Leese and Fuchs do not claim or specify using "a **pure** bending moment created by applying through **non-slip** contacts a pair of torque couples of **equal** magnitude that are **evenly** rotationally displaced at **equal** rates" (claim 1), or that the "material bends **only** as a result of the pure bending moment, and **no other stresses** are present that cause deformation, such that there is a **minimum of stress concentrations**" (claim 2). Though the claims should be allowed as they stand, the Applicant proposes the following amendments to claim 1 to further clarify what is claimed and to further narrow the scope of the claims.

CURRENTLY AMENDED CLAIM WITH MARKINGS TO INDICATE CHANGES

Claim 1. (Currently Amended) What I claim as my invention is a method of bending elongate material that utilizes a pure bending moment created by applying through non-slip contacts a pair of torque couples of equal and constant magnitude that have axes of rotation that are parallel to each other and intersect the elongate material perpendicular to the elongate axis of the elongate material that are evenly rotationally displaced at equal and constant rates in opposite directions simultaneously while, at the same time, being displaced linearly toward each other as the elongate material deforms, such that a pure bending moment is maintained throughout the duration of the bending process by accommodating the changing geometry of the deforming elongate material.

CLAIM LISTING

Claim 1. (Currently Amended) What I claim as my invention is a method of bending elongate material that utilizes a pure bending moment created by applying through non-slip contacts a pair of torque couples of equal and constant magnitude that have axes of rotation that are parallel to each other and intersect the elongate material perpendicular to the elongate axis of the elongate material that are evenly rotationally displaced at equal and constant rates in opposite directions simultaneously while, at the same time, being displaced linearly toward each other as the elongate material deforms, such that a pure bending moment is maintained throughout the duration of the bending process by accommodating the changing geometry of the deforming elongate material.

Claim 2. (Original) The method of claim 1 wherein the elongate material bends only as a result of the pure bending moment, and no other stresses are present that cause deformation, such that there is a minimum of stress concentrations in the elongate material caused by the bending process.

Claim 3. (Withdrawn) I claim as my invention a computer controlled elongate bender machine that utilizes the method proposed in claim 1 with an embodiment consisting of a stationary bender assembly affixed to a support rail and a rolling bender assembly that rolls along the same support rail with each bender assembly consisting of a gearmotor coupled to a gearbox coupled to a low contact stress material interface that transfers torque to the elongate material in the form of torque couples arranged such that the two couples create a pure bending moment in the elongate material over the bending section.

Claim 4. (Withdrawn) The machine of claim 3 wherein the rolling bender assembly is displaced linearly along the support rail toward the stationary bender assembly during the bending process such that the material interface assemblies are positioned such that the couples continue to produce a pure bending moment in the bending section of the elongate material throughout the bending process, the rolling bender assembly locating linearly closer toward the stationary bender during the bending process to accommodate the changing geometry of the bending section of the elongate material.

Claim 5. (Withdrawn) The machine of claim 3 wherein an operator desiring a specific bend uses a digital interface to communicate with a computer control program that uses geometry and plasticity theory calculations and references a database of correction factors specific to specific elongate materials to determine the bend formula for the desired bend and then, through the control circuitry, controls the rotational displacement of the two gearmotors of the elongate material bender machine while observing the linear displacement between the rolling bender assembly and the stationary bender assembly as well as the rotational position of the material interfaces and after the rotational displacement of the material interfaces is completed, the material interfaces are rotated back in the opposite direction, or backed off, until the elastic rebound of the elongate material is released and then the control program evaluates the performance of the bend formula and updates the correction factor database if necessary.

Claim 6. (Withdrawn) The machine of claim 3 wherein the material interface assemblies are designed specifically for each application such that the contact stresses between the elongate

material and the material interface assembly are less than the yield strength of the elongate material, such that surface deformations and additional stress concentrations within the elongate material can be avoided.

Claim 7. (Withdrawn) The machine of claim 3 wherein the rotational displacement of both of the material interface assemblies is equal in magnitude and rate at all times and occurs simultaneously as the linear displacement between them is reduced such that the elongate material is allowed to freely bend in response to, and only to, the applied pure bending moment.